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LECTOTYPE DESIGNATION FOR *EMPIS CHICHIMECA* WHEELER AND MELANDER (DIPTERA: EMPIDIDAE)

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Abstract.—A lectotype and six paralectotypes for *Empis* (= *Lamprempis*) *chichimeca* Wheeler and Melander are designated from the syntype series. Diagnostic leg features of the lectotype male are discussed and illustrated. Comments concerning the lectotype and its presumed detached hind leg are provided.

The Neotropical genus *Lamprempis* Wheeler and Melander presently includes 22 species of metallic greenish blue to black flies with an evanescent anal wing vein and peculiarly ornamented legs. The often dimorphic sexes show presence or absence of pennate hair fringes and other modifications of the legs. Several species are known from one sex only. Little information is available about the biology and habits for species of *Lamprempis*. Smith (1975) reports that one species, *L. sazimae*, occurs in great numbers in the highlands of Minas Gerais, Brazil, where it serves as an important pollinating agent for certain Umbelliferae and Eriocaulaceae growing in meadows at 1300 m above sea level.

The purpose of this paper is to report the interesting results of my study of the available syntype series for *Empis chichimeca* Wheeler and Melander (1901: 368), the type species of *Lamprempis*, and to designate a lectotype for this species.

In 1981, while examining the A. L. Melander types of *Empis* Linnaeus at the National Museum of Natural History (USNM), I found several syntype specimens of *E. chichimeca*. The original series consisted of nine specimens (two males and seven females) collected by H. H. Smith in Amula, Guerrero, Mexico. I could find only three female specimens in the USNM type collection. Also present was the apparent right hind leg of a male, glued to a card rectangle and labeled "type" in Melander's hand. It had been attached on its anterior side and embedded in an unknown adhesive, but the characters of the exposed posterior surface are easily visible and match the description of the species provided by Wheeler and Melander (1901). At that time I supposed that the leg, which possesses characters sufficient for recognizing the species, was the only portion remaining of one male, the remainder destroyed by pests or otherwise lost.

Later, in the collection of the American Museum of Natural History (AMNH), I discovered another part of the same syntype series (one male, three females). All specimens are in good condition. Interestingly, I found that the AMNH male is intact except for the missing right rear leg. After re-examining the USNM point-mounted leg, I concluded that it likely represents the missing leg from the AMNH specimen.

There is no indication when the leg of the male syntype was broken or removed from the otherwise intact specimen. One can only speculate why the leg was not kept with the associated male. The detached leg, however, possesses the diagnostic features of the species (see Smith 1975) and it serves as an

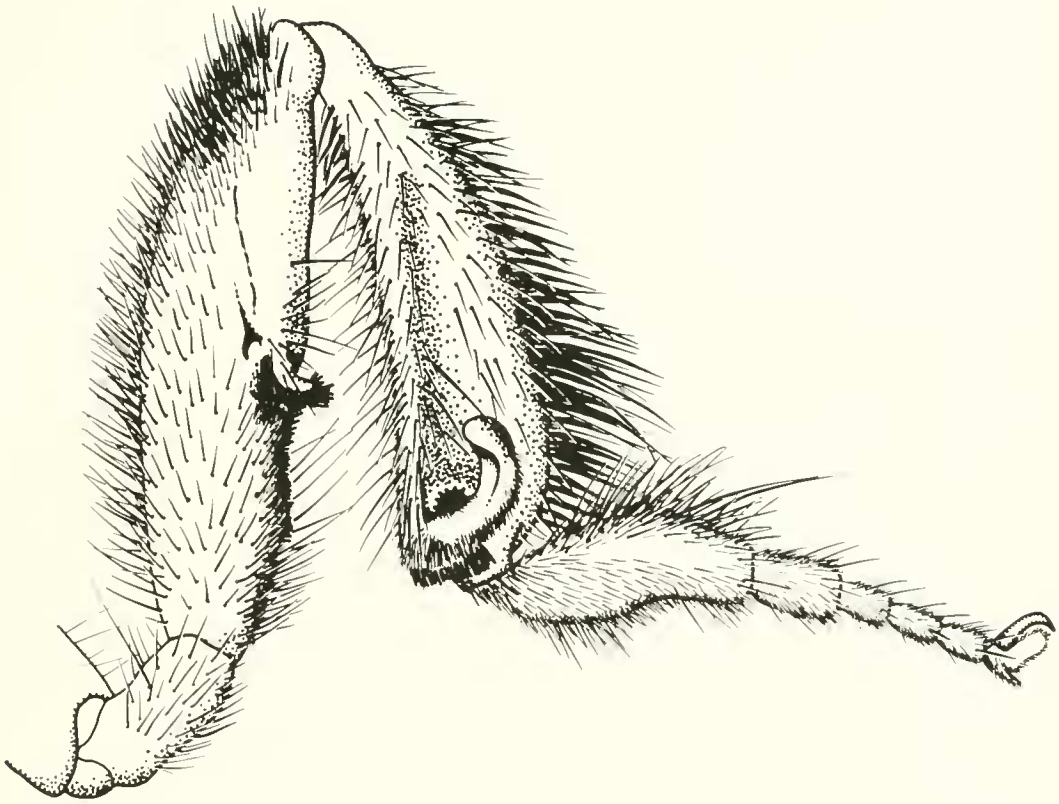

Fig. 1. Right hind leg (detached) of *Empis* (= *Lamprempis*) *chichimeca*, lectotype male, in posterior view.

excellent reference even without the intact specimen itself. The leg may have permitted Melander to have the ideal "reference specimen" in his collection while Wheeler had the remainder of the specimen. Because I cannot find the other male in the syntype series, I assume that the detached leg may have served this function for Melander.

Because this male and especially its detached leg bear the diagnostic features of the species, and nearly intact AMNH male is hereby designated the lectotype of *Empis* (= *Lamprempis*) *chichimeca* and its detached right rear leg (in the USNM) is similarly marked with my red lectotype label. I have illustrated the detached right leg (Fig. 1) along with the left hind leg (Fig. 2). The remaining six females of the known syntype series have been labeled paralectotypes.

The male specimen (AMNH) selected as lectotype is in excellent condition, except for the missing right rear leg, and bears the following label data: "Amula, Guerrero, 6000 ft., Sept., H. H. Smith/W. M. Wheeler Collection/TYPE NO. ____ AMNH [red label]/AMNH, DIZ No. 918 [white label]/LECTOTYPE, Empis (= Lamprempis) chichimeca Wheeler and Melander, des. W. J. Turner 1988 [red label, hand written]."

The point-mounted leg (USNM) lacks a locality label but has the following label data: "E. chichimeca W & M TYPE [white label in Melander's hand]/Cotype Lamprempis chichimeca W & M [red cotype label in Melander's hand]/A L Melander Coll. 1961 [white label with green checked margin]/LECTOTYPE (part), Empis (= Lamprempis) chichimeca Wheeler and Melander, des. W. J. Turner 1988 [red label, hand written]."

Besides the lectotype male, I found that

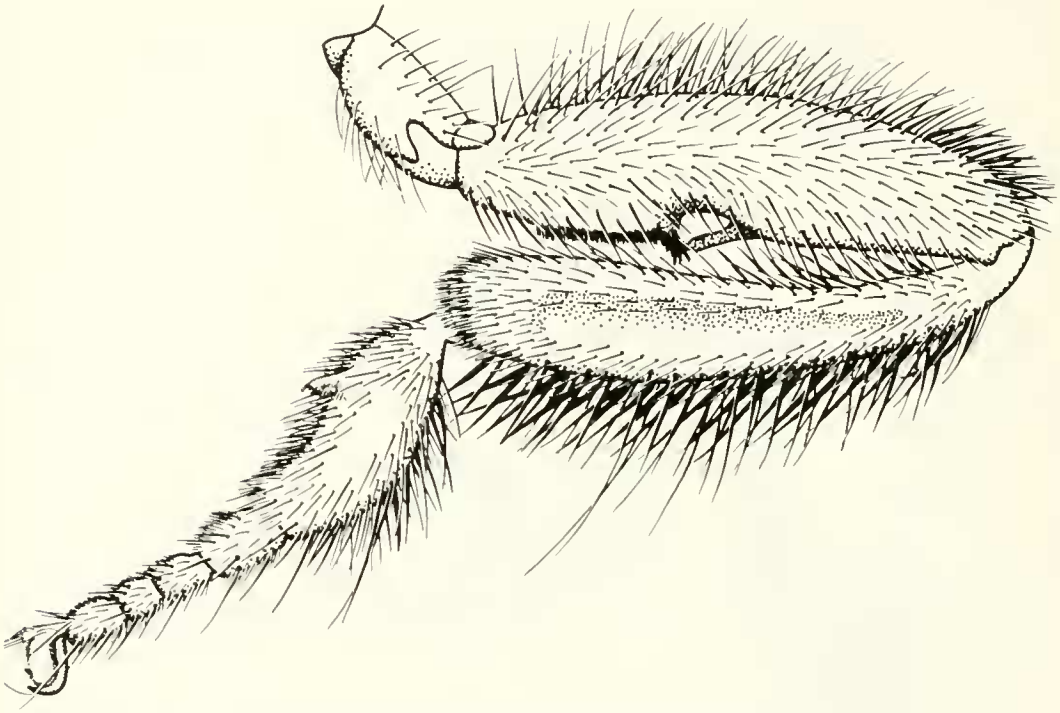

Fig. 2. Left hind leg of *Empis* (= *Lamprempis*) *chichimeca*, lectotype male, in anterior view.

only two of the available females (AMNH) bear the same label data. The remaining four females (USNM, AMNH) have identical labels but were collected in August.

Only seven specimens (one male, six females) from the original syntype series of nine specimens have been accounted for. The location of one additional male and female remain unknown. Because much of the insect material described in the Biologia Centrali Americana was subsequently deposited in the British Museum (Natural History) (BM), I asked John Chainey, Curator of Diptera (BM), to check for syntype specimens of this species. He was unable to locate any representatives of *chichimeca* under either *Empis* or *Lamprempis* in the BM collection. Further, there was no reference made to the species in any lists of holdings by the museum. All of the known syntypes, now in either the USNM or AMNH, were originally in the collections of W. M. Wheeler or A. L. Melander respectively, as indicated by the personal collection labels attached to the specimens. Only one USNM female lacks such a label probably because it was placed in that collection by the authors shortly after the species was described.

Discussion

In 1901 *Empis chichimeca* was described by W. M. Wheeler and A. L. Melander, and placed into their new subgenus *Lamprempis* along with five other species from Mexico. Coquillett (1903) elevated *Lamprempis* to generic rank and designated *E. chichimeca* as the type species. Although the diagnostic features for this species have never been illustrated, the species is easily keyed. Smith (1975) includes *E. chichimeca* in his tentative key to the described species of *Lamprempis* and uses essentially the same wording as in the original description by Wheeler and Melander for describing the unique features of the hind leg: "Hind femora pos-

teroventrally with two slender finger-like processes, with an emargination between them; hind tibia posteriorly with a stout scoop-shaped process truncated and flattened at the extremity; hind basitarsus incrassate with an anterior projection tipped with two small black spines."

The hind legs of this species are somewhat asymmetrical with minor differences in structures from left to right. Similar asymmetry can be found in the armature of the hind legs of males of *Empis* (*Enoplempis*) *mira* Bigot. In the case of *E. chichimeca* the right femur appears to have a small hooked process on the posterior surface near the base of the larger, digitate process. Proximal to the small hook is a low, irregular carina with toothlike projections running obliquely across the subbasal fourth of the hind surface. Unfortunately the leg is embedded in an adhesive glue matrix and the edge of the glue follows along the carina. On the left femur, in comparison, the small hook is lacking as is the oblique carina. The description was likely made from the right (detached) appendage as it refers to the two, slender, fingerlike processes, probably the thicker digitate process and the small hooked one. I found that the similar digitate processes located medially on the posteroventral margin of both hind femora also differ from left to right in orientation, the left one being more linear, the right more oblique. One will also see from the illustrations that the general outline of each femur is different as well.

Both hind tibiae are moderately concave medially on both the anterior and posterior surfaces along nearly their entire length. The concavities appear natural and not simply artifacts of the legs having collapsed at death. Although the surrounding areas are heavily bristled, the depressed spaces remain essentially bare.

Smith (1975) indicates in couplet 14 of his key that *E. chichimeca* has only simple leg bristles. However, pennate bristles can be found in two irregular rows along the entire dorsal surface of each hind tibia and flanked by fewer, less developed but still flattened bristles. An additional five or six pennate setae can be found at the extreme base of the tibiae ventrally while each femur bears a cluster on its inner and dorsal surfaces apically. Although pennate leg bristles are not uncommon in females of some Empidinae (e.g., *Rhamphomyia* species), they are unusual in males and appear restricted to *Lamprempis*.

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